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## A NEW EOCENE FOSSIL FROM CLAIBORNE.

BY T. H. ALDRICH.

*MITROMORPHA* EOCENENSIS, n. sp.



Shell small, but five whorls remaining (the embryonic whorls are broken off), sulcate, the longitudinalinals close set and prominent, the spirals the same on the smaller whorls, but on the body whorl more prominent at the suture and the base; suture distinct and rather deep; outer lip denticulated; pillar lip with two tubercles, the one nearest the canal long and tapering. Canal short, slightly widened and slightly twisted.

Length 7 mm., breadth 3 mm.

*Locality*: Claiborne Sand Bed, Claiborne, Alabama.

*Remarks*: In *Mitromorpha pygmaea* Dall and others examined, the spiral sculpture seems to predominate, but in the species described above the longitudinal is the stronger.

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## TWO INTERESTING NEW ENGLAND NUDIBRANCH RECORDS.

BY FRANCIS N. BALCH.

The absolutely lamentable state of our present knowledge (or rather ignorance) of the New England Nudibranchs is in no small part due to the capricious and baffling occurrence of that interesting

group. Here to-day and gone to-morrow, perhaps abundant one year and not observed again for decades, even on shores where they are in most years common if rightly sought at the right season, they remain practically unknown to many whose collecting is done only in summer.

A good deal of evidence has accumulated to show that many of the forms, chiefly Aeolidians, have a peculiar life-history, somewhat as follows: Coming on the shore in early spring they breed in the rock-pools or not far below low-water mark, and almost immediately die. The young, growing slowly at first and escaping observation by reason of their minute size and often marvelously "protective" (?) coloration, work their way slowly off shore with the coming of warmer weather, migrating still further out as the cold sets in, and attain their growth over winter in comparatively deep water, only to perform the reverse migration, breed and die the next spring. They are thus annuals. This is supposed to be the case particularly with Aeolidian forms, but not even for them is the theory universally accepted. There are certainly grave objections to it. It has been urged that neither the on-shore nor the off-shore migration has been followed; that the young ought not to escape observation over summer even though minute and inconspicuous; that they occasionally, though rarely, occur in summer adult or nearly so; that the dredge fails to reveal them of nearly adult size in winter when they should occur. On the other hand it is a fact that many of the species have a fairly definite season (usually early spring, more rarely late autumn, and still more rarely at other times) when in most years they are with us in fair numbers and of full size, and thereafter—and suddenly—thence depart and are seen no more till the next year at the same season or perhaps many years later at the same season. This holds good of the rocky shores in the neighborhood of Boston, and I imagine few of us have ever seen there, except in spring, more than very scant and scattering examples of the Aeolid type.

The following captures, therefore, have a distinct interest, even though, by the fault of the writer, it is much less than it should be.

On November 15, 1905, Owen Bryant, Esq., of Cohasset, Mass., took from kelp dislodged by a storm from water of moderate (but uncertain) depth more than sixty Nudibranchs of at least eleven different species practically in company at that one spot. Not one was very young (less than say 3-4 mm.) Not one was adult.

He very kindly notified me and gave a Sunday to a trip to Cohasset where I saw the remarkable haul still alive. The early darkness of a November afternoon, the absence of apparatus and books and my absorption in professional work which precluded the possibility of my attempting to transport and preserve the living creatures for further study, may be held sufficient excuse for my failure to identify the species at the time fully and reliably, but not for my apparent failure to preserve some of the more interesting forms for later working over. To my great regret, however, the single Dorid form is the only one I am now able to find.

The species identified were as follows according to my notes:

*Cratena gymnota* (Couth.). "1 specimen quite juv., cores of cerata very dark."

? *Cratena veronicae* Verrill. "1 specimen, abt.  $\frac{3}{4}$  in., cerata very green, very like *viridis* A. & H."\*

*Coryphella mananensis* (Stimps.) "1 specimen, abt.  $\frac{1}{2}$  in., juv."

? *Coryphella salmonacea* (Couth.). "> *diversa* Couth., 1 nearly adult spec., abt. 1 in." Unfortunately *salmonacea* (Couth.,) [now Bergh] does *not* include *diversa* (Couth.), as I then supposed, and both species are in utmost need of further elucidation. Wherefore I much regret my failure to preserve this specimen as a consequence of which I am now quite unable to say what I really had before me—at all events something wholly distinct from *mananensis*.

*Dendronotus frondosus* (Ascanius). "3 specimens, abt. 1 in."

*Dendronotus robustus* Verrill. "1 specimen, abt.  $\frac{3}{4}$  in."

*Palio lessonii* (d'Orb.) "2 specimens, abt.  $\frac{1}{2}$  in., like A. & H's. figures of adult but anal tubercles very conspicuous and white instead of yellow."

*Lamellidoris aspera* (A. & H.) > *pallida* A. Ag. "1 specimen, juv., abt.  $\frac{1}{2}$  in."

The above enumeration certainly includes all the species (and likewise all the specimens) of all except the Aeolid forms. But of the Aeolid species enumerated there were in all likelihood many more specimens, while I noted that there were at least three obviously different Aeolid species which I did not undertake to name. Quite probably there were more. The whole enumeration only

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\* I had Alder & Hancock's figure before me in making the comparison.

accounts for eleven specimens out of more than sixty. I only had time to note the larger and more conspicuous ones.

On September 19, 1907, Mr. Bryant made a somewhat similar haul, although less interesting. He most kindly brought the material to me still alive, and I was able to study it more adequately.

There were twenty-nine specimens of three species, and all were taken together from the bottom of a floating clam-car.

The species were as follows:

*Facelina bostoniensis* (Couth.) now *Coryphella bostoniensis* (Couth.).

Bergh et auct. al. Europ., "7 specimens, 4 to 10 mm."

*Coryphella mananesis* (Stimps.). "2 specimens, 8 mm., 14 mm."

*Palio lessonii* (d'Orb.). "20 specimens, 1 abt. 12 mm., the rest abt. 5 mm. Seem browner in coloration and much more sparsely tuberculated, with relatively more conspicuous circum-anal tubercles than the European type as figured."

It will be noted that here again not one is adult, while not one is very young.

It seems to me that these two captures suggest strongly an autumnal condensation of the half-grown *Nudibranch* population (of certain groups) in moderate depths, just off the shore perhaps, best explained tentatively as a "wave of migration" to deeper water for the winter. It is clear enough how a population, which would be very sparse if spread over the whole area from three fathoms, let us say, to extreme low-water mark, might be much condensed if the cooling waters or failing food supply set them all moving off shore about the same time, only to check and bank up at the edge of some particular deep channel or cold current or on some specially favorable hunting-ground which all hitherto living anywhere inshore of it must cross.

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#### NEW MICHIGAN LYMNÆAS.

BY BRYANT WALKER.

(Concluded.)

#### *Lymnæa desidiosa peninsulæ*

Types (No. 20040 Coll. Walker) from the headwaters of the Union River, Ontonagon County, Michigan. Cotypes in the collections of the Philadelphia Academy and the Chicago Academy of Sciences. Also from Little Iron River, Ontonagon Co., Salmon